

GOVERNANCE STRUCTURES, CASH HOLDINGS AND FIRM VALUE: EVIDENCE FROM COMPANIES LISTED ON THE TEHRAN STOCK EXCHANGE

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ABSTRACT

Corporate governance is a relatively new research area in Iran that has recently been considered, as various measures have been incoherently adopted to implement its various dimensions in the money and capital markets of the country. Corporate governance is among the most significant issues in any monetary and financial institution. Previous research has shown that corporate governance-oriented behaviors improve organizational performance in stable economic conditions while acting as a shield in adverse financial crisis conditions. Cash holdings is one of the company's most vital assets. The purpose of this study was to examine the effect of governance structure and cash holdings on the firm value of companies listed on the Tehran Stock Exchange. This research was conducted for the period of 2010-2017. The results revealed that the structure of corporate governance and cash holdings have an effect on the firm value of companies. Corporate governance systems can influence the value of companies through their board of directors and shareholding structure.

Keywords: *corporate governance, governance structure, cash holdings, firm value*

INTRODUCTION

Determining the value of firm and identifying its contributing factors in capital markets has always been a challenging subject for investors and financial analysts alike. They have always sought to recognize the factors that affect the value of the firm, so that by monitoring these elements, they can measure the true value of the firm. In doing so, they are seeking reduce the discrepancy between the market value of the firm and its true intrinsic value. Based on the aforementioned discussion, the importance of measuring the firm value and its contributing factors are outline. Therefore, estimating the prospective value of firms has always been one of the main concerns of investors, for which various financial indices have been used in this way, notably including sales revenue, gross profit, operating profit, pre-tax profit and net profit. All of the aforementioned indices are considered components of the profit and loss statements, hence, studying the information content of these indices are of paramount importance in predicting the value of firms (Izadinia and Dari-Sadeh, 2010).

There are different criteria for evaluating the performance of firms, which are mostly divided into two categories; (1) The first category is studied under accounting models, in which the equity value of the firm is derived by multiplying profit by the price-to-earnings ratio, and (2) the second category is studied under economic models of determining value. Economic models include: economic profit model including economic value added and market value added indices, shareholder value added approach and discounted cash flows approach (Rahnama Rudposhti and Khan-Mohammadi, 2011).

One of the most important issues in financial management within companies is to increase the performance of the firm with the purpose of increasing the firm value. Consequently, in order to achieve this goal, studying the decision factors that can affect the firm value is of critical value. Many scientific and professional studies around the globe have studied the impact of corporate decision-making regarding capital structure, leverage, corporate activities, and corporate liquidity. Recently, bearing in mind the consecutive bankruptcies during financial crises in both developed and developing countries, many financial analysts have shifted their attention to the causes and effects of the crisis on various economies. One of the major issues proposed is agency problems and their effects on firm performance, which were previously discussed by Berle and Means (1932) and then further developed and studied by Jensen and Meckling (1976). Furthermore, most empirical findings presented on the effect of ownership concentration, capital structure, and firm value are ambiguous and not particularly explicit. Hence, a wide range of current literature examines various notions and forms of firm value (Al-Najjar, 2016).

In previous literature, evaluating performance has been associated to corporate governance using return on capital and assets, return on equity, and Tobin's q. For instance, Abor (2007) attributes the performance of firms listed on the Ghanaian Stock Exchange to corporate governance. However, another factor involved in the performance of firms is their market value. How does corporate governance affect the value of a company? The relevant literature offers varying results as there is no clear direction as to whether corporate governance provides positive or negative value to the firm. Performance indicators of asset returns, stock returns, and Tobin's q are related to corporate governance. Equity is attributed to firm value in the literature. It is evident that there is a connection between equity and the high profits of firms. They are able to reduce capital costs and can also make high valuations in the capital market. The findings of Brown and Caylor (2006) indicate that firms with better governance have higher value in the capital market. Dittmar and Mahrt-Smith (2007) argued that corporate governance is related to cash assets, and the literature indicates that, depending on whether a firm has poor or good governance mechanisms, the firm values are correspondingly affected. Where companies have a weak corporate governance structure, managers can see the potential to misuse cash and make purchases that devalue the company. Nonetheless, this can be avoided through a good organizational governance structure, and thus decisions can be made that increase the value of the company (Asante-Darko et al., 2018).

Considering the high level of association between corporate performance and ownership structure, Laporta et al. (1998) showed that legal protection for shareholders and ownership concentration can affect corporate performance. Roy (2000) studied ownership differences in the United States and showed that in more democratic countries, there is a greater concentration of ownership. Moreover, Thomsen and Pedersen (2000) stated that the level of ownership concentration influences managers and has a positive relationship with firm value. However, Dennis and McConnell (2003) argued that ownership concentration has a positive relationship with firm value. There are conflicting views regarding increasing the ownership concentration and risk of blocked shareholders, which can lead to a decrease in firm value. However, they argue that this relationship is not uniform and methodical. Cubbin and Leech (1983) showed that there is a positive relationship between ownership concentration and accounting profitability criteria in the UK. Furthermore, Lloyd et al. (1987) showed that there



is a greater ownership concentration between the higher ratio of market value to sales (Rafigh et al., 2015).

Corporate governance is considered effective when it serves the company's resource management as a managerial attitude. Cash holdings is perhaps one of the assets that is more vulnerable to behavior of managers. Therefore, an effective corporate governance system must have a taxonomy for resource management. As long as this is done successfully, shareholders receive the maximum return on their capital. Weak corporate governance has adverse implications for liquidity management. Weak managers can only maintain less cash holdings. Inappropriate investment due to poor corporate governance affects the profitability of the company and consequently firm value (Rafigh et al., 2015) .

For the past two decades, in the academic literature as well as in political societies, considerable interest has been devoted to understanding the usefulness of corporate governance in firms, especially since major corporate inconsistencies in several advanced economies and focusing on different corporate governance practices in several countries or modification of existing methods. Such progresses have often been accompanied by the development of disclosure standards with the purpose of increasing investor confidence, strengthening the depth of financial markets, and protecting shareholder rights (Ghosh, 2018).

The structure and mechanism of corporate governance is regulated by national law, which prevents organizations from implementing and making decisions outside the developed principles. National and large-scale laws can be a good criterion for judging the activities of corporate governors that highlights inappropriate behaviors and principles. These laws have long protected the rights of the company's shareholders and have developed specific roles for them. The national legal system can form the relationship between shareholders and corporate governors and enhance shareholder value (Bell et al., 2014).

The mechanism of employing internal funds is an important decision in the conflict between shareholders and managers. During a company's economic growth, as cash holdings improve, managers should decide on whether cash should be distributed among shareholders, spent on domestic expenditures, used for foreign research and development, or simply be maintained. How profit-seeking managers choose between consuming or maintaining cash reserves is an issue with ambiguous nature. Managers should compare the personal benefits of current expenditures with the flexibility that comes inherently with maintaining cash reserves. Furthermore, profit-seeking managers need to measure the possibility of benefits outweighing the costs of maintaining cash. Harford et al. (2008) examined how the problems of the agency relationship affect the willingness of American companies to hold cash. They used multiple corporate governance criteria to measure agency relationship problems. These criteria are: ownership concentration (whose criteria are managerial and institutional ownership), board compensation, composition of the board of directors (including active and non-executive members of the board of directors) and shareholder rights protection index.

Cash is considered an important and vital asset for any economic unit. Cash flows play a key role in many financial decisions. Historical information on cash flow can prove useful for monitoring the accuracy of past valuations and showing the relationship between the activities of the economic units and their prospective receipts and payments. Companies always hold a certain percentage of their assets in cash. Moreover, a plethora of companies have increased



their level of cash holdings. The purpose of this study is to investigate the effect of governance structure of firms, cash holding levels and ownership structure on the value of firms listed on the Tehran Stock Exchange. The present study seeks to offer solutions for the following question:

- *Does the structure of corporate governance, the level of cash holdings and the ownership structure affect the value of firms listed on the Tehran Stock Exchange?*

In the rest of this article, the theoretical foundations are reviewed and hypotheses are formulated. In the third section, the model and operational definition of the variables are presented, and in the fourth section, the data are analyzed and finally the authors offer their discussion and conclusion.

RESEARCH LITERATURE

In a competitive market structure, managers are faced with multiple choices that have little effect on performance appraisal and profitability. Understanding the factors that affect the profitability, revenue, and performance of the firm is considered a challenge in these markets. In studies conducted by the Industrial Organization in the United States, market share and growth have been cited as important criteria for performance evaluations. In contrast to the the importance of market share as an indicator of the competitive environment of the firm, its role in valuation models based on accounting information is marginal, and most accounting studies suggest that the market should focus on projecting prospective earnings as a factor in returns and stock prices, and firm profits should be considered as a criterion for measuring current and future performance (Amiri, 2014). The valuation of companies is performed based on two groups of principles; The first group are capital market-based valuation models that seek to determine the value of the company and its shares using market information. The second group of valuation models are based on accounting data, and seek to determine the value of the company using the accounting information in the financial statements (Vadiei and Azimifar, 2012).

Ownership structure refers to the level of management and ownership of the employees (internal ownership) in a company. The previous research shows that the ownership structure has a non-linear relationship between corporate governance and firm values. The results indicate that self-ownership increases the value of firms, but internal ownership has directions, effectively resulting in reduced firm values (Asante-Darko et al., 2018).

Giroud and Mueller (2011) and Brown et al. (2011) showed in their research results that corporate governance influences company policies and performance. One of the most important aspects of financial management is the investment decision-making. Based on the findings of researchers such as Black (2001), Klapper and Love (2003), Gompers et al. (2003) and Beiner and Schmid (2005), corporate governance is heavily involved in improving corporate performance, and hence there is a the direct relationship between corporate governance and its performance in developed and developing financial markets (Vakilifard and Bavandfar, 2010).

Corporate governance has to deal with three aspects of corporate decision-making processes: (1) who has the ability to make decisions; (2) on what basis a particular decision is made? (3) do contextual factors such as social, political, economic, and legal institutions influence the



decision-making process and its consequences? Empirical research on corporate governance in United States, Britain, Europe, and Japan has not received the similar attention in emerging and developing economies, and there have been differences in the results of these studies. The results show that not only a part of the uncertainty about the performance of corporate governance has affected the results, but also, compared to developing countries, underlying factors in developed countries have affected the results as well (Mishra et al., 2017).

Corporate governance is consisted of a set of relationships and procedures followed by the company with the aim of ensuring the health of the relationship between the company's shareholders and the effective use of company resources by the company's managers. The importance of corporate governance procedures became highly evident after the 2008 financial crisis (Rashwan, 2012). A corporate governance system must be properly elaborated because of different financial systems, different cultural contexts and, most significantly, shifts in financial conditions in different countries (Ahmed , 2011).

Cridge (2005) argued that corporate governance can be defined and applied in different ways. In its global form, it depends on the relative authority of owners, managers, and suppliers of capital, achievement of which requires procedures, rules and policies that affect the way the company is supervised and controlled (Okiro et al., 2015). Based on research background and studies on various notions of corporate governance, the definitions for corporate governance are generally divided into two main categories. The first category pertains to the definitions that identify and recognize the behavioral patterns of companies having in mind the financial structure, growth, efficiency and productivity of performance and relationships with shareholders and lenders. The second class of definitions identifies the main and normative framework in terms of the rules and regulations of governance, control, supervision and contribution of the activities to the company. There is an evident overlap between these two sets of definitions that are in contradiction with theories of Principal-agent. In most definitions, corporate governance is attributed to management oversight and control of the company or managerial behavior (Darweesh, 2015).

Furthermore, the ownership structure is not able to positively influence the performance of companies. Corporate governance systems can influence the value of companies through basic internal mechanisms, board of directors and stock ownership structure. Ownership concentration can be a solution to agent-principal problems and improve corporate performance. A plethora of theoretical studies have revealed that shareholder have strong motives for supervising managers, as they believe that this reduces the risk of misusing stock dispersal in companies. Also, large shareholders are better equipped to take joint action against managers compared to shareholder dispersion, and ultimately the effect of stock ownership leads to a reduction in stock exchanges and an increase in shared profits and equities for major shareholders (Mishra et al., 2017).

Cash is considered to be one of the most vital assets in any company. Achieving successful results in the forthcoming operations of companies depend in part on the existence of a regular cash flow. Cash flow is considered an effective component in the eyes of managers, shareholders and creditors alike. Richardson (2006) shows that over-investment is concentrated in companies with the highest levels of free cash flow, where managers are highly involved in useless costs. Excess liquidity increases the resources that are under managers' control, which makes cash prone to be used in projects that offer non-cash benefits,



with no value added to the stock. According to previous literature, cash in over-invested companies is less valuable than in under-invested companies, and the amount of over-investment is negatively related to the margin of value of the cash holdings (Huang et al., 2015).

In some studies, the identified negative relationship between cash balance and firm value is mainly due to the lack of added value and the holding of liquidity by managers due to access to cash. The literature shows that in cases where cash is available, managers can get involved in attracting the company, which does not contribute to the maximization of shareholder wealth. Managers can also control the activities that reduce the value of companies by converting company assets into cash assets (Asante-Darko et al., 2018).

Managers can also interfere with investment decisions. Managers can intervene in some costs that are not necessary for the operation of their institutions. Therefore, in investors' decisions, managers' added value should be closely monitored. Also, the degree of control of shareholders can also affect the use of cash flow by managers (Asante-Darko et al., 2018).

In addition to these empirical findings, the impact of cash assets on firm values are examined in other studies. For example, Chen (2008) showed that in some cases, cash is held for prudential and contingent transactions, and that according to the theory of financial hierarchy, having cash for upcoming transactions reduces the cost on firm's capital, which in turn is expected to lead to increased value of the firms and exploitation of investment opportunities. The literature offers contrasting results in this sense, in that cash assets can have a negative, positive and even no effect on firm value. Kalcheva and Lins (2007) found that there is a negative relationship between cash assets and firm value, while Mikkelsen and Partch (2003) showed a positive relationship between firm value and cash assets (Asante-Darko et al., 2018).

Various International and domestic studies have been conducted on the firm value, corporate governance and cash holdings. Ferreira and Vilela (2004) examined the factors affecting cash in a sample of EU companies from 1987 to 2000. The authors employed three different regression methods, namely (1) Fama–MacBeth annual time series regression model; (2) Cumulative cross-sectional regression; and (3) Cross-sectional regression using the mean of variables. Their results showed that cash holding was positively affected by investment opportunities and cash flows, while it is negatively affected by asset liquidity, financial leverage and firm size. Bank debt is also negatively related to cash balance, indicating that close banking relationships enable companies to maintain lower cash holdings with a prudent incentive. Companies in countries with more investor protection and more concentrated ownership also have less cash, which confirms the role of agency costs arising from management authority.

Harford et al. (2008) examined corporate governance and cash holdings of firms. How do agent-principal problems affect the willingness of American companies to hold cash? Multiple criteria of corporate governance were used to measure agency relationship problems, namely ownership concentration (whose criteria are managerial and institutional ownership), board compensation, composition of the board (including active and non-executive members of the board) and shareholder rights protection index.

Autukaite and Molay (2010) examine the effect of held cash and working capital management on the value of a company on the French Stock Exchange. They argued that although



companies make decisions every day for short-term planning, the issue of company value is a category that is considered among the long-term plans of companies. The obtained evidence proved that the shareholders underestimate cash holdings and working capital.

Leung and Cheng (2013) examined the relationship between corporate governance and firm value in the period of 2007-2009. The relationship between corporate governance and firm value has been extensively studied in Chinese companies. According to the final characteristics of the shareholders, Chinese companies can be divided into three categories: (1) central control by the government, (2) local control by the government, and (3) without government control. It is argued that the corporate governance mechanisms of firms with central control by the government are better than those of other firms. Therefore, in this study, the authors seek to examine the effect of corporate governance mechanisms on the value of firms with central government control and local government control that are listed on the stock exchange. The results showed that the total ownership of major shareholders and the compensation of senior managers indicate different effects on the firm value. The corporate governance mechanism has an effect on the internal composition of shareholders and central and local government. Andrew et al. (2014) examined corporate governance, financial management decisions, and firm performance within the maritime industry. This study examines the relationship between corporate governance and (1) management decisions such as profit management and investment below the desired level, and (2) the performance of the company in the maritime industry. In this study, the results show that the corporate governance, corporate decision-making, top management and corporate performance are all interrelated. This relationship can potentially help solve the problems of reducing agency costs and improving financial management decisions and the performance of firms involved in maritime industry. Selçuk (2015) examined the diversity of governance and firm value in emerging markets. The study was performed on 1568 companies from markets of Brazil, Chile, Indonesia, Malaysia, the Philippines, Poland, South Africa, Thailand and Turkey in the period 2010-2005. The results showed that the diversity of corporate governance affects the value of most firms. Saona et al. (2016) examined the impact of national governance and ownership concentration as determining factors of firm value in Latin America. This research was conducted in the period of 1997-2013. The results showed that the governance of law affects the market value of firms. Information asymmetries and frictions of multiple markets can affect the firm values.

Tuyet et al. (2017) examined independent managers, ownership concentration, and firm performance in companies listed on the Vietnam Stock Exchange. This research was conducted in the period 2014-2010. The results of the study revealed that there is a negative relationship between independent managers and the performance of the firm, which is mostly due to information asymmetry, lack of expertise and less ownership concentration.

Mishra et al. (2017) studied the effect of ownership and board structure on firm value on 500 companies between 2010-2014. The findings indicated that there is a significant difference between the ownership of the founders and the performance of the firm at different levels, and also the size of the board is positively related to the return on assets, while the independence of the board has no relationship with performance indicators.

Asante-Darko et al. (2018) examined the effect of governance structure, cash holding and ownership concentration on firm value, and reported that there is no significant relationship between board size and firm value. Companies that are evaluated by auditors affiliated with



the organization are valued higher in market. Moreover, cash assets of firms have a negative effect on firm performance.

By examining the effect of governance structure on the relationship between capital structure and firm value with the structural equation modeling approach in companies listed on the Tehran Stock Exchange, Moinuddin et al. (2014) showed that corporate governance plays a mediating role in the relationship between capital structure and firm value, and also there is a statistically significant relationship between corporate governance, and firm value and capital structure. Shoorvarzi et al. (2015) investigated the relationship between corporate governance and firm performance based on fuzzy regression and argued that there is a relationship between the presence of non-executive members in the board and the existence of institutional owners with the company performance, and also, no significant relationship was observed between the dual role of the CEO and the performance of the company. Therefore, according to the results of this study, paying attention to corporate governance mechanisms with the aim of improving company performance is of paramount importance.

Anvari Rostami et al. (2017) examined the capital structure, cash holdings and value of firms listed on the Tehran Stock Exchange. The results showed that there is a statistically significant relationship between capital structure and cash holdings. However, no relationship was witnessed between the components of capital structure (short-term debt and long-term debt) and cash holding. Also, the proposed model for examining the combined effect of capital structure and cash holding on firm value was not approved. Mohammadi and Noroush (2018), studied the mechanism of evaluation of the impact of internal governance on the level of cash holdings in firm listed on the Tehran Stock Exchange, the results of which showed that the size and independence of the board of directors - as measures of the internal dimension of corporate governance - had an inverse relationship with the level of cash holdings.

MODEL AND DATA

Based on the aforementioned arguments, the following hypotheses are presented:

- governance structure has direct effect on the value of firms listed on the Tehran Stock Exchange.
- The level of cash holdings affects the value of firms listed on the Tehran Stock Exchange.
- The ownership structure affects the value of firms listed on the Tehran Stock Exchange.

hypotheses in this research are tested using the model from Asante-Darko et al. (2018)

The hypotheses are tested using the following model:

$$Y_{it} = \beta' GOV_{it} + \delta' OWNS_{it} + \varphi CASH_{it} + \phi' CONTRL_{it} + \varepsilon_{it}$$

GOV is a vector of corporate governance variables that is measured based on the following criteria:

BODIND is a dummy variable that measures the percentage of independent directors on the board. If this ratio is 100%, this variable is equal to one, otherwise it is equal to zero.

BODSIZE: This variable is used to measure the size of the board, which is calculated from the ratio of the total number of board members.

BODMEET: This variable is used to weigh in the total number of board meetings.

OWNS represents the ownership variable obtained from the ratio of shares held by managers and employees. This variable assists the author to examine the relationship between internal ownership and firm value.

CASH: a representing the natural logarithm cash holdings at the end of the year to observe the effect of cash assets on the value of the firm.

CONTRL is a vector of control variables that contains leverage, dividend ratio, and Tobin's q. Tobin's q is used as a proxy for prospective investment opportunities and leverage is used as a proxy for financial risk.

Y_{it} : Represents the value of the company, which is obtained based on the price of the final quarter of the fiscal year.

Using state-of-the-art estimation methods on panel data in this paper, the existing problems in previous studies are eliminated as much as possible and hence consistent and reliable results are presented. This study was conducted in the period of 2010-2017. 107 companies listed on the Tehran Stock Exchange were systematically selected from the stock market as a sample.

EXPERIMENTAL DATA AND RESULTS

Descriptive statistics

The very first step in statistical analysis is to determine the summarized characteristics of the data and to calculate the descriptive indicators. The purpose of this analysis is to identify the internal relationships within variables and to show the behavior of subjects with the purpose of providing the basics for statistical analysis and to reveal the descriptive characteristics for further analysis. Data analysis in this section was performed by calculating central indicators such as mean and median and distribution indicators such as standard deviation, maximum and minimum values of variables.



Table 1: Descriptive statistics of research variables

	CASH	DPS	LEV	OWNS	TOBIN_S_Q	Y
Mean	0.550960	0.667288	0.620499	0.342072	0.598426	3.699232
Median	0.574960	0.700360	0.620525	0.274357	0.500180	3.672452
Max	0.994179	0.972996	2.422023	0.985967	5.151086	4.782258
Min	0.086394	0.129550	0.012734	0.029777	-79.26437	2.587711
SD	0.145622	0.191613	0.272047	0.224517	3.367076	0.361344
Skewness	-1.264557	-0.597322	1.414220	1.037169	-22.15454	0.280303
Kurtosis	5.439118	2.527497	9.445589	3.266180	525.8656	2.734508
Observation	604	604	604	604	604	604

Normality of research variables

In order to estimate the model parameters in this research, the method of ordinary least squares is was employed. The ordinary least squares method is based on the assumption that the variable has a normal distribution and its non-normal distribution leads to the breach of the assumptions for this method of estimating parameters. Therefore, it is necessary to test the normality of the variables. In the present study, the normality test is examined using Jarque–Bera test. If the level of statistical significance of this test is greater than 0.05, the null

hypothesis, in that the distribution of variables is normal, is accepted. The results of the Jarque–Bera test for the variables are presented in Table 2.

Table 2: Jarque–Bera statistic of dependent variables

Normality test	Y
Jarque–Bera	9.683233
significance	0.007894
Observations	640

In Table 2, due to the smaller value of the significance level of Jarque–Bera statistic than 0.05, the dependent variables are not normal; given the non-normal nature of stock data, and also due to the large sample size ($N > 30$) and the high number of observations in this study, the central limit theorem was employed, from which it can be concluded that as the base volume in the sampling gets larger, the variance between the samples is decreased and the average distribution of the sampled communities gets closer to the normal distribution, and the normality of the desired distribution increases with increased number of iterations (n).

Durability test of variables (unit root):

In order to examine the durability of the research variables, the Phillips–Perron unit root test was employed for research variables. If the time series used in the regression are not stable, a false regression may occur. The result of the Phillips–Perron unit root test for the studied model variables is presented in the following table below.

Table 3: Durability of variables

Variable	Phillips–Perron test		Result
	Value	Significance	
CASH	440.059	0.0000	Durable
DPS	294.362	0.0002	Durable
LEV	551.470	0.0000	Durable
OWNS	408.717	0.0000	Durable
TOBIN_S_Q	398.634	0.0000	Durable
Y	489.876	0.0000	Durable

The results of Table 3 show that for all variables, the value of the probability statistic of all tests is less than 0.05 and this indicates that all research variables are durable.

Test of model detection:

The type of estimation method must first be determined to estimate the model for the hypotheses. Therefore, first, to determine whether to use the pooled data method or the panel data method, the Chow (F-Limer) statistic is measured. Considering the assumption that the coefficients of the variables are constant, it should be determined whether the y-intercept is constant in all years or not. In general, selecting between the Pooled and Panel models is done using the following test:

$$\begin{cases} H_0: \alpha_1 = \alpha_2 = \alpha_3 = \dots = \alpha_{t-1} & \text{(pooled model) all } y - \text{ intercepts are equal} \\ H_1: \alpha_i \neq \alpha_j & \text{(pooled model) there is at least one } y - \text{ intercepts that is different equal} \end{cases}$$

Table 4: F-Limer test results

Dependent variable	F-Limer	DoF	Sig.	Result
Y	5.691267	(81,514)	0.0000	Panel Model

Estimation of model using fixed or random effects :

While employing the panel data model, the fixed effects model should be tested against the random effects model. The Hausman test is the tool considered for this purpose in this study. In other words, the answer to the question of whether y-intercept is constant for different sections, assuming the coefficients related to the variables are constant. Here, it should be determined whether the difference y-intercepts of the cross-sectional units act consistently, or can random effects more clearly express this difference between sections. This method is known in the literature of panel data as fixed and random effects, which are briefly discussed below.

Fixed effects

A common method for formulating a panel data model is based on the assumption that differences between units can be represented as differences in y-intercepts, i.e. y-intercepts is different for each coefficient.

Random effects

Society is made up of infinite decisions, not infinite individuals. In this scenario, y-intercepts should be considered as conditional and constrained, that is, it is better treat them as random terms and not fixed ones. The random effects method assumes that the fixed component identifying the different sections is randomly distributed between different units. With the introduction of these two methods, the question that arises is that which of these methods should be used in practice, a decision which is made using Hausman test.

The test of this hypothesis is as follows:

H_0 = random effects

H_1 = fixed effects

Table 5: Hausman test results

Dependent variable	Hausman statistic	DoF	Sig.	Result
Y	30.702672	8	0.0002	Fixed effects

Considering that the significance value is less than the error level of 0.05, then the null hypothesis of this test, which expresses the preference of using pooled data over the panel data is rejected, and the estimation by panel data method is preferred, and thus y-intercepts should be calculated for the model.

considering that the significance value of the Hausman test is less than the pre-defined error level of 0.05, the null hypothesis based on equation estimation is rejected by the random effects method, and the model should be thus estimated using fixed effects.

Multicollinearity of variables

In econometrics, multicollinearity occurs when two or more explanatory (independent) variables in a multivariate regression are highly correlated with each other. Correlation here means a linear relationship between independent variables. Depending on the strength of the correlation between the independent variables, the level and type of multicollinearity will vary. multicollinearity is more or less present in all regression models; What is more important is the intensity of the multicollinearity between the independent variables. The existence of a “complete multicollinearity” nullifies the classical assumptions of the regression model. In this study, the correlation coefficient between them has been used to investigate the multicollinearity of the explanatory variables. The results are shown in Table (6).

Table 6. Absolute value of correlation coefficient

Correlation	BODIND	BODMEET	BODSIZE	CASH	DPS	LEV	OWNS	TOBIN's q	Y
BODIND	1.000	~	~	~	~	~	~	~	~
BODMEET	0.030	1.000	~	~	~	~	~	~	~
BODSIZE	0.016	0.074	1.000	~	~	~	~	~	~
CASH	0.052	0.019	0.013	1.000	~	~	~	~	~
DPS	0.054	0.015	0.060	0.076	1.000	~	~	~	~
LEV	0.002	0.010	0.013	0.028	0.014	1.000	~	~	~
OWNS	0.030	0.031	0.087	0.030	0.026	0.005	1.000	~	~
TOBIN_S_Q	0.075	0.127	0.010	0.080	0.059	0.201	0.021	1.000	~
Y	0.024	0.174	0.073	0.121	0.173	0.293	0.238	0.315	1.000

From the table, it is evident that the maximum absolute value of the correlation coefficient between the variables is of 0.315, indicating that there is no multicollinearity between the explanatory variables.

Estimation of models:

Self-correlation test is one of the classic assumptions of regression. Durbin–Watson statistic is a test statistic used to examine the existence of autocorrelation (the relationship between values separated by a given time lag) between residues in regression analysis. The value of this statistic is always in the range of 0 to 4, while the universally accepted thresholds are as follows: A value of 2 for this statistic indicates the lack of autocorrelation, which is the optimal state in the main hypotheses related to residuals in regression analysis. Basically, a value less than 2 indicates consecutive positive correlations (a type of consecutive correlation in which a positive residual value for one observation increases the chance of the other observation being positive, and vice versa) while a value greater than 2 indicates a negative consecutive correlation between the residuals. It noteworthy however that in case the value of the test statistic is less than 1 or more than 3, the absence of a positive or negative correlation between the residuals is at jeopardy. The value of this statistic in this study is close to 2, which indicates the absence of an autocorrelation, an optimal state in the main hypotheses related to residuals.

Table 7: Results of hypothesis test

Variable	Coefficient	T-statistic	Significance
BODIND	0.212742	1.999443	0.009137
BODMEET	0.498304	7.290346	0.0000

BODSIZE	-0.026873	-2.055758	0.02916
CASH	0.533475	5.375286	0.0000
DPS	0.803574	7.978031	0.0000
LEV	0.507135	13.83015	0.0000
OWNS	0.429178	8.846023	0.0000
TOBIN_S_Q	0.037061	12.35742	0.0000
C	2.144500	21.26899	0.0000
Fitness of Model	$R^2 = 0.684800$		
	F= 12.54733		
	prob(F)= 0.000		
	D.W=1.971577		

The results from estimating the model regression model are presented in Table (7). The results for model estimation and significance level related to F is less than 0.05, which indicates that the input variables, including control and independent variables, are significant at the 95% confidence interval, hence showing a good fit of the model.

Hypothesis 1: The structure of corporate governance has a direct effect on the value of companies listed on the Tehran Stock Exchange.

The correlation coefficient of the independent variable of corporate governance structure (BODIND) on the dependent variable of company value (Y) was calculated to be 0.212742 and the t-test statistic was measured as 1.999443, whose absolute value is greater than the critical t-value at the 5% error level, i.e. 1.96, indicating that the observed coefficient is not significant. Significance value is calculated to be 0.009137, which is less than the error level of 0.05, and hence the above finding is confirmed.

The correlation coefficient of the independent variable of corporate governance structure (BODMEET) on the dependent variable of the value of the company (Y) is calculated as 0.4498304 and the t-test statistic is 7.29346 which its absolute value is greater than the critical t-value at the 5% error level, i.e. 1.96, indicating that the observed coefficient is significant. Significance is also calculated to be 0.0000, which is less than the error level of 0.05, and hence the above finding is confirmed.

The value of the coefficient of influence of the independent variable of corporate governance structure (BODSIZE) on the dependent variable of company value (Y) is calculated to be -0.026873 and the t-test statistic is -2.055758, the absolute value of which is greater than the critical t-value at the 5% error level, i.e. 1.96, indicating that the observed coefficient is significant. Significance is also calculated as 0.02916, which is less than the error level of 0.05, and hence the above finding is confirmed.

Thus, in overall, it can be argued that the structure of corporate governance has a significant effect on the value of companies listed on the Tehran Stock Exchange, and thus the first hypothesis is confirmed.

Hypothesis 2: The level of cash holding has an effect on the value of companies listed on the Tehran Stock Exchange.

The correlation coefficient of the independent variable of cash holding (CASH) on the dependent variable of company value (Y) is calculated to be 0.533475 and the test t-statistic is measured as 5.375286, whose absolute value is greater than the critical t-value at the 5%




error level, i.e. 1.96, indicating that the observed coefficient is significant. The significance value is also calculated to be 0.0000, which is smaller than the error level of 0.05 and confirms the aforementioned finding. Therefore, it can be said that with 95% probability, the level of cash holding has a significant effect on the value of companies listed on the Tehran Stock Exchange, and thus the second hypothesis is confirmed.

Hypothesis 3: The ownership structure influences the value of companies listed on the Tehran Stock Exchange.

The correlation coefficient of the independent variable of ownership structure (OWNS) on the dependent variable of the value of the company (Y) is measured as 0.429178 and the t-test statistic is determined as 8.846023, whose absolute value is greater than the critical t-value at the 5% error level, i.e. 1.96, indicating that the observed coefficient is significant. The significance value is also calculated to be 0.0000, which is smaller than the error level of 0.05 and confirms the hypothesis. Therefore, it can be said that with 95% probability that the ownership structure has a significant effect on the value of companies listed on the Tehran Stock Exchange, and thus the third hypothesis is confirmed.

CONCLUSION



Evaluation is significantly involved in different areas of science and its role is different in each field of work. Here, its role in the field of finance is elaborated. The purpose of financial management is to maximize the value of firms. The relationship between of paramount importance. In recent years, models such as economic value-added analysis have been proposed for measuring value creation in firm. What these models focus on are the sources of value creation, such as whether the company's strategic decisions lead to value creation or loss, or whether financing or profit-sharing leads to value-added balance for firms. The evaluation process is useful in such decisions, resulting in a better understanding of the firm value. In this study, the effect of governance structure and cash holdings within corporates on the value of firms listed on the Tehran Stock Exchange has been examined. The results showed that the structure of corporate governance and cash holding had a significant effect on firm value. Corporate governance systems can influence the value of companies through basic internal mechanisms, board of directors and stock ownership structure. According to the research findings, the following recommendations are presented:

It is suggested that shareholders and financial analysts be more attentive to the ownership structure of firms in measuring the value of companies and perform the process of valuation in accordance with the performance of major shareholders in other companies.

It is recommended to have in mind the amount of cash holdings of companies while decision-making, as it can lead to the use of investment opportunities by managers, ultimately increasing firm value in the process.

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